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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/827,104

04/19/2004

Justin L. Fort

121-0003

1477

22120

7590

09/18/2008

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EXAMINER

LE, TOAN M

ART UNIT

PAPER NUMBER

2863

MAIL DATE

DELIVERY MODE

09/18/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/827,104	<b>Applicant(s)</b> FORT ET AL.	
	<b>Examiner</b> TOAN M. LE	<b>Art Unit</b> 2863	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 May 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3,4,6-8,13,15,29,31 and 47-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3,4,6-8,13,15,29,31 and 47-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/27/08</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Objections***

Claim 3 is objected to because of the following informalities:

Claim 3, line 5, “determine a relative order the probes” should read -determine a relative order of the probes-.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 3, 4, 13, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Fort (US Patent No. 4,320,472).

Referring to claim 3, Fort discloses a system for measuring a property at a surface, the system comprising:

a plurality of survey probes, each having a unique identifier (col. 6, lines 17-33); and

a survey controller RCT (Figure 1) configured to automatically poll the survey probes to obtain respective identifiers and determine a relative order of the probe (col. 6, lines 33-68 to col. 7, lines 1-29),

each survey probe configured to:

disconnect a downstream neighbor survey probe and enter an idle state (col. 7, lines 30-57);

report its unique identifier to the survey controller if in the idle state and in response to a polling command from the survey controller (col. 7, lines 58-64); and

change to a state other than the idle state after reporting its unique identifier (col. 7, lines 65-68 to col. 8, lines 1-68 to col. 9, lines 1-64).

As to claim 4, Fort discloses a system for measuring a property at a surface, the survey controller configured to assign and transmit a different, unique identifier to each survey probe (col. 3, lines 67-68 to col. 4, lines 1-9 and lines 26-41; col. 6, lines 17-51).

Referring to claim 13, Fort discloses a system for measuring a property at a surface, wherein the survey controller is configured to individually program plural of the survey probes to inject current into the surface simultaneously or according to a programmed timing scheme (col. 25, lines 25-30).

As to claim 15, Fort discloses a system for measuring a property at a surface, wherein the survey controller is configured to individually program respective ones of the survey probes to acquire geophysical data according to a programmed timing scheme (col. 3, lines 67-68 to col. 4, lines 1-9; col. 6, lines 17-51; col. 9, lines 1-32).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fort (US Patent No. 4,320,472) as applied to claim 3 above, and further in view of Orban et al. (US Patent No. 6,847,896).

Referring to claim 6, Fort does not teach the survey controller and survey probes being connected by a first number of conductors, the survey probes being configured to perform a second number of simultaneous measurements of the surface, and the second number greater than, and not limited by the first number.

As to claim 7, Fort does not teach the survey controller being remotely accessible through a computer network for remote control of the survey controller and the survey probes.

Referring to claim 8, Fort does not teach the survey probes being connected to the survey controller through three conductors, two conductors supplying power and a third conductor acting as a communications bus.

Orban et al. disclose that it is known in the art to provide:

the survey controller and survey probes being connected by a first number of conductors, the survey probes being configured to perform a second number of simultaneous measurements of the surface, and the second number greater than, and not limited by the first number (col. 6, lines 33-43) as in claim 6;

the survey controller being remotely accessible through a computer network for remote control of the survey controller and the survey probes (col. 6, lines 33-62; col. 12, lines 60-67 to col. 13, lines 1-2) as in claim 7; and

the survey probes being connected to the survey controller through three conductors, two conductors supplying power and a third conductor acting as a communications bus (col. 6, lines 33-43) as in claim 8.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have applied the teaching of Orban et al. into the reference of Fort for improving survey probe positioning determination remotely.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 29 is rejected under 35 U.S.C. 102(e) as being anticipated by Orban et al. (US Patent No. 6,847,896).

Referring to claim 29, Orban et al. disclose a system for performing geophysical measurements, the system comprising:

a survey controller (col. 15, lines 13-33); and

a plurality of survey probes for which respective position are determinable (col. 13, lines 62-67 to col. 14, lines 1-16) using respective a radio frequency (RFID) transponders associated with the probes and a portable Global Positioning system (GPS) receiver,

wherein the system combines identification information from the RFID transponder with positional information from the GPS receiver for use by the survey controller in addressing and commanding individual ones of the survey probes (col. 15, lines 52-67).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 31 is rejected under 35 U.S.C. 102(b) as being anticipated by Fort (US Patent No. 4,320,472).

Referring to claim 31, Fort discloses a system for measuring a property of a surface, the system comprising:

a plurality of survey probes (col. 6, lines 17-33); and

a survey controller configured to supply power to the survey probes using a power conduit;

where the survey probes automatically electrically disconnect from the power conduit while measuring the property and operate using an internal source of power when disconnected to reduce noise (col. 6, lines 10-16 and lines 33-68 to col. 7, lines 1-29).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 31 is rejected under 35 U.S.C. 102(e) as being anticipated by Orban et al. (US Patent No. 6,847,896).

Referring to claim 31, Orban et al. disclose a system for measuring a property of a surface, the system comprising:

a plurality of survey probes (col. 5, lines 8-61; col. 10, lines 54-61; Figure 1); and  
a survey controller configured to supply power to the survey probes using a power conduit;

where the survey probes automatically electrically disconnect from the power conduit while measuring the property and operate using an internal source of power when disconnected to reduce noise (col. 15, lines 13-33).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 47, 48, and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Fort (US Patent No. 4,320,472).

Referring to claim 47, Fort discloses a system for acquiring geophysical data based on measurements taken using survey probes, the system comprising:



a plurality of the survey probes (col. 5, lines 42-68), each having a unique identifier (col. 6, lines 17-33) and each including data acquisition circuits and storage for measurements acquired thereby, the storage buffering the acquired measurements for subsequent, post-measurement transfer via a data communication interface (col. 6, lines 1-9; col. 7, lines 34-53); and

a survey controller communicatively coupled to receive from each of the survey probes its respective unique identifier, to automatically determine at least a relative ordering of the survey probes with respect to each other and to thereafter command individual ones of the survey probes based, at least in part, on the automatically determined relative ordering (col. 7, lines 30-68 to col. 8, lines 1-68 to col. 9, lines 1-64).

As to claim 48, Fort discloses a system for acquiring geophysical data based on measurements taken using survey probes,

wherein the survey probes are configured to isolate themselves from an external power supply connection, and to instead operate from an internal power source, for a period during which the respective survey probe collects geophysical data (col. 6, lines 10-16).

Referring to claim 50, Fort discloses a system for acquiring geophysical data based on measurements taken using survey probes, wherein the system determines relative ordering based on a startup sequence that includes:

each survey probe disconnecting its downstream neighbor and entering an idle state (col. 7, lines 30-57);

in response to a poll received from the survey controller while in the idle state, each survey probe reporting its unique identifier (col. 7, lines 58-64); and

thereafter, a reporting one of the survey probe changing to a state other than the idle state and reconnecting its downstream neighbor, if any, for subsequent polling by, and reporting to, the survey controller (col. 7, lines 65-68 to col. 8, lines 1-68 to col. 9, lines 1-64).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fort (US Patent No. 4,320,472) as applied to claim 47 above, and further in view of Orban et al. (US Patent No. 6,847,896).

Referring to claim 49, Fort does not teach:

wherein the relative ordering includes positional ordering, and

wherein each of the survey probes includes radio frequency identification (RFID) transponder including memory for receiving positional information from a Global Positioning System (GPS) receiver proximate thereto, the survey probes configured to supply the survey controller with the received positional information in association with the respective unique identifier.

Orban et al. disclose that it is known in the art to provide:

the relative ordering includes positional ordering, and

wherein each of the survey probes includes radio frequency identification (RFID) transponder including memory for receiving positional information from a Global Positioning

System (GPS) receiver proximate thereto, the survey probes configured to supply the survey controller with the received positional information in association with the respective unique identifier (col. 15, lines 52-67).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have applied the teaching of Orban et al. into the reference of Fort for improving survey probe positioning determination remotely.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 51-53 and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Fort (US Patent No. 4,320,472).

Referring to claim 51, Fort discloses a method for performing geophysical measurements, the method comprising:

obtaining a unique identifier from each of plurality of survey probes placed at a surface (col. 6, lines 17-33);

determining a relative position of each of the survey probes as placed (col. 5, lines 42-57);

commanding individual ones of the survey probes using the obtained unique identifiers and based on the determined relative positions thereof (col. 6, lines 33-68 to col. 7, lines 1-29);

collecting geophysical data using the survey probes (col. 6, lines 1-9); and

storing the geophysical data in digital form at the respective survey probes for later transmission to a survey controller (col. 6, lines 1-9; col. 7, lines 34-53).

As to claim 52, Fort discloses a method for performing geophysical measurements, wherein the survey probes are connected to the survey controller by one or more conductors that supply power (col. 5, lines 58-68; col. 6, lines 10-16), the method further comprising:

automatically disconnecting individual ones of the survey probes from at least the power supply conductors for a period that, for the respective survey probe, includes the collecting of geophysical data (col. 7, lines 30-57); and

operating the survey probes when disconnected using an internal source of power to reduce noise (col. 6, lines 10-16).

Referring to claim 53, Fort discloses a method for performing geophysical measurements, wherein the relative position is determined by the survey controller based on a startup protocol that includes:

each survey probe disconnecting its downstream neighbor and entering an idle state (col. 7, lines 30-57);

in response to a poll received from the survey controller while in the idle state, each survey probe reporting its unique identifier (col. 7, lines 58-64); and

thereafter, a reporting one of the survey probe changing to a state other than the idle state and reconnecting its downstream neighbor, if any, for subsequent polling by, and reporting to, the survey controller (col. 7, lines 65-68 to col. 8, lines 1-68 to col. 9, lines 1-64).

As to claim 56, Fort discloses a method for performing geophysical measurements, further comprising:

performing both seismic and electrical resistivity measurements using the same survey probes (col. 25, lines 25-30).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 54-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fort (US Patent No. 4,320,472) as applied to claim 51 above, and further in view of Orban et al. (US Patent No. 6,847,896).

Referring to claim 54, Fort does not teach:

determining the relative positions of the survey probes using a radio frequency identification (RFID) transponder to uniquely identify each respective survey probe and a portable Global Positioning System (GPS) receiver to determine coordinates of a uniquely identified survey probe proximate thereto,

associating coordinates determined by the GPS receiver with the identifying information for the proximate survey probe.

As to claim 55, Fort does not teach:

the survey controller and survey probes are connected by a first number of conductors, the method further comprising:

performing a second number of simultaneous measurements with the survey probes, the second number greater than, and not limited by, the first number.

Orban et al. disclose that it is known in the art to provide:

determining the relative positions of the survey probes using a radio frequency identification (RFID) transponder to uniquely identify each respective survey probe and a portable Global Positioning System (GPS) receiver to determine coordinates of a uniquely identified survey probe proximate thereto,

associating coordinates determined by the GPS receiver with the identifying information for the proximate survey probe (col. 15, lines 52-67) as in claim 54; and

the survey controller and survey probes are connected by a first number of conductors, the method further comprising:

performing a second number of simultaneous measurements with the survey probes, the second number greater than, and not limited by, the first number (col. 6, lines 33-43) as in claim 55.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have applied the teaching of Orban et al. into the reference of Fort for improving survey probe positioning determination remotely.

### ***Response to Arguments***

Applicant's arguments with respect to claims 3-4, 6-8, 13, 15, 29, 31, and 47-56 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TOAN M. LE whose telephone number is (571)272-2276. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:30 P.M..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Toan Le

/Michael P. Nghiem/  
Primary Examiner, GAU 2863

September 12, 2008